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IDENTIFIERS	*Charlotte Mecklenburg Public Schools NC

ABSTRACT

The symposium here reported was conducted to expose educational administrators to recent research that may help schools become more productive. Prefatory material includes biographical information on the presenters, the agenda, and an introduction that emphasizes the importance of considering school culture when applying research findings. Transcripts of four paper and/or discussion sessions constitute the bulk of this document. The first paper, "Variables in Measuring Educational Productivity" by Herbert J. Walberg, identified variables investigated by recent inquiries into the determinants of student achievement and synthesized those studies' findings. The second, "Human Resource Management in Education" by James E. Sweeney, discussed progress and continuing deficiencies in principals' leadership skills and provided general recommendations for improved principal training. The third session consisted of "Answers to Questions about the Research" concerning teaching and learning and was presented by Donald E. Mackenzie. The final paper, "Charlotte-Mecklenburg's Teacher Career Development Plan" by Jay M. Robinson, describes the Charlotte-Mecklenburg (North Carolina) Public Schools' plan for maintaining educational quality by attracting highly qualified teachers. The first, second, and fourth sessions' transcripts are followed by summaries of discussion taking place after the presentations. Completing the report are summaries of "significant areas for action and research" for the four session topics and a general closing discussion. A list of participants is appended. (MCG)

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SYMPOSIUM
ON
EDUCATIONAL PRODUCTIVITY

The Proceedings

U.S. DEPARTMENT OF EDUCATION
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Austin, Texas
October 25, 1983

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SOUTHWEST
EDUCATIONAL DEVELOPMENT LABORATORY

RPSP

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SYMPOSIUM

ON

EDUCATIONAL PRODUCTIVITY

The Proceedings

Austin, Texas
October 25, 1983

Presented By

THE REGIONAL PLANNING AND SERVICE PROJECT
of
THE SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY
211 East 7th Street, Austin, Texas 78701
512/476-6861

SEDL

The Southwest Educational Development Laboratory (SEDL) is one of a network of regional educational laboratories and university-based research and development centers operating to improve educational practice through research, development, technical assistance, and dissemination activities.

Dr. Preston C. Kronkosky
Executive Director

RPSP

THE REGIONAL PLANNING & SERVICE PROJECT (RPSP), a project of the Division of Educational Information Services of the Southwest Educational Development Laboratory, provides assistance in planning and problem-solving to the Chief State School Officers of their designees in Arkansas, Louisiana, Mississippi, New Mexico, Oklahoma, and Texas.

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ACKNOWLEDGEMENTS

The success of the Symposium on Educational Productivity results from the admirable investigative, conceptual and planning skills of Dr. Patricia Duttweiler. With the consultation provided by Cynthia Levinson and the logistical support of Barbara Lecroy and Claire Waring, Pat architected this Symposium in response to the extensive interest of educators in the SEDL region in seeking to increase productivity in our schools.

Also to be commended are Dr. Michael Kirst, whose analysis of the implications for state policymaking, and Dr. Donald Mackenzie, whose stellar synthesis of the research underpinned this Symposium; Dr. Herbert Walberg, who reported on his meta-analysis of research on factors related to school effectiveness; Dr. James Sweeney, who provided a lucid presentation on the essential role of human resources management in assuring productivity; and, Dr. Jay Robinson, who, with humor and wisdom, explained the plan for teacher career development in force in Charlotte, North Carolina. Reports of their fine presentations, along with the comments and suggestions for action and research proposed by the participants, comprise this report.

Martha L. Smith
Division Director
Educational Information Services

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PRESENTERS

DR. HERBERT J. WALBERG

Dr. Herbert J. Walberg, now Research Professor of Education at the University of Illinois at Chicago, has held research appointments at the Educational Testing Service and the University of Wisconsin and has taught courses in social psychology and measurement/evaluation at Chicago State, Rutgers, and Harvard Universities. He has presented more than 80 research papers at meetings of the American Psychological Association, the American Educational Research Association, and other professional societies. Dr. Walberg received his Ph.D. in Educational Psychology from the University of Chicago.

DR. JAMES E. SWEENEY

Dr. James E. Sweeney, Associate Professor, Iowa State University, teaches courses in school leadership and organizational theory emphasizing theory-to-practice; provides inservice training to area administrators; supervises field experience for superintendents and principals; conducts research in educational administration; and is a consultant for the Iowa School Improvement Project. He has been a teacher, guidance director, and high school principal. Dr. Sweeney received his Ed.D. in Educational Administration from Virginia Polytechnic Institute.

DR. DONALD E. MACKENZIE

Dr. Donald E. Mackenzie, previously Associate Director for Evaluation and Data Collection for the Educational Opportunity Program at Marquette University, is currently establishing Maclin Information Services, a private consulting firm in Del Rio, Texas. Dr. Mackenzie received a Ph.D. in Social Psychology from Harvard University. Author of a recent article in Educational Researcher (12 (4), 1983), "Research for school improvement: An appraisal of some recent trends," Dr. Mackenzie was commissioned to write "School effectiveness research: A synthesis and assessment" for the SEDL publication Educational Productivity and School Effectiveness (October 1983).

DR. JAY M. ROBINSON

Dr. Jay M. Robinson, Superintendent of the Charlotte-Mecklenburg Schools, Charlotte, North Carolina, received his Ed.D. in School Administration from Duke University and an Honorary Doctor of Laws from Davidson College. Having been a teacher, principal, and assistant superintendent, Dr. Robinson was Superintendent of Cabarrus County Schools, North Carolina, for 12 years before moving to Charlotte-Mecklenburg six years ago. He is a member of the American Association of School Administrators and is on the Education Commission of the States Task Force on Incentives for Teachers.

EDUCATIONAL PRODUCTIVITY SYMPOSIUM

OCTOBER 25, 1983

7:45am — *- Coffee, Rolls and Conversation -*

8:00am — WELCOME
Dr. Martha L. Smith, Division Director
Educational Information Services, SEDL
OPENING REMARKS
Dr. Preston C. Kronkosky, Executive Director
Southwest Educational Development Laboratory
INTRODUCTIONS
Dr. Patricia C. Duttweiler, Policy Analyst
Regional Planning and Service Project, SEDL

8:30am — VARIABLES IN MEASURING EDUCATIONAL PRODUCTIVITY

Dr. Herbert J. Walberg
Office of Evaluation Research
University of Illinois at Chicago

o DISCUSSION OF IMPLICATIONS
Martha L. Smith, Discussion Leader

10:00am — *- Break -*

10:15am — HUMAN RESOURCES MANAGEMENT IN EDUCATION

Dr. James E. Sweeney
Department of Professional Development
Iowa State University

o DISCUSSION OF IMPLICATIONS
Linda A. Lloyd, Discussion Leader

11:45am — *- Lunch -*
On Your Own
(Regional Planning Council luncheon meeting, 2nd floor Board Room)

Sponsored By SEDL's

REGIONAL PLANNING AND SERVICE PROJECT

1:15pm — ANSWERING QUESTIONS ABOUT THE RESEARCH

Dr. Donald E. Mackenzie
Maclin Information Services
Del Rio, Texas

2:00pm — CHARLOTTE-MECKLENBURG'S TEACHER CAREER DEVELOPMENT PLAN

Dr. Jay M. Robinson, Superintendent
Charlotte-Mecklenberg Schools
Charlotte, North Carolina

- DISCUSSION OF IMPLICATIONS
  Cynthia Y. Levinson, Discussion Leader

3:45pm — *- Break -*

4:00pm — AREAS FOR ACTION
AREAS FOR FURTHER RESEARCH
Patricia C. Duttweiler, Discussion Leader

5:15pm — CLOSING REMARKS

Ms. Cynthia Y. Levinson, Project Administrator
Regional Planning and Service Project, SEDL

5:30pm — ADJOURN

Southwest Educational Development Laboratory

SYMPOSIUM ON EDUCATIONAL PRODUCTIVITY

October 25, 1983

Austin, Texas

WELCOME

Dr. Martha Smith, Division Director, Educational Information Services, SEDL

Five precepts underlie most recommendations about American education:

1) Education is correlated with economic and social development in this society.
2) Quality education as a lifelong process is a universal right.
3) Public schools are a mainstay of this society.
4) Quality teachers and teaching underlie improved learning.
5) Accountability and leadership of everyone in education must increase.

It is in the spirit of these precepts and as a reflection of recent reports about education that our advisory group, the Regional Planning Council, requested this symposium and the Regional Planning and Service Projects presents it.

OPENING REMARKS

Dr. Preston C. Kronkosky, Executive Director, SEDL

We are experiencing a new climate in American public education. Some people say the public education system is a fossil and ought to be shunted aside; that private schools might be a better way of educating people. Reports have been issued in the last 12 months that are highly critical of

American public education. Most of these reports specify changes that should be put into effect. Many of us agree that education can be made better.

Today we have the attention of the American business community more than we have ever had before. Business leaders are convinced that the nation's economic well-being and our ability to compete on a global scale rest upon the quality of education in the public schools. So it behooves us to take this opportunity, in an atmosphere that some characterize as intensely critical, to ask how we can take something that is good already, that is the envy of most of the remainder of the world, and make it better.

CHANGE IN THE SCHOOLS

Dr. Patricia Duttweiler, Policy Analyst, Regional Planning and Service Project, SEDL

Those of us in education currently feel caught between the irresistible force of the effective schools research and the immovable object of the current commission reports -- the former supposedly providing a blueprint for correcting the ills pointed out by the latter.

Educators typically respond to demands for change by looking to theory or research for innovative solutions to problems. We then introduce those innovations into the classroom -- usually in the form of some expected teacher behavior change. More often than not, however, we do not see any lasting effects. This type of change perspective has been labeled RD&D -- research, development and dissemination.

The RD&D model of school change usually begins with the development of some innovative solution to a problem experienced by a particular school. If the innovation proves effective, it is disseminated to others as a

generalized concept to answer particular problems in other schools. Someone decides that the innovation is just what his or her system needs and proceeds to "sell" the teachers on that innovation and "train" them to change their behavior in order to put the innovation in place. Usually only one innovation is introduced at a time.

Because the RD&D method of change usually focuses on changing individual teacher's behavior and considers only a small part of a school's functioning, this perspective does not take into account the realities of how schools resist or accomplish change. If we continue to use this perspective alone, we are in danger of again experiencing what Heckman, Oakes, and Sirotnik call the "Chinese New Year Syndrome." Each new school year the teachers face the "Year of the --- something." One year it was the "Year of the Open Classroom" --- another year was the "Year of Team Teaching." This year may end up being called the "Year of Mastery Learning" and next year could be the "Year of Time on Task." Teachers have seen these "Years" come and go. They have rarely been asked for their perceptions of the problems let alone their suggestions for the solutions. They learn to endure the outside imposition of another innovation that is supposed to cure their school's problems because it worked somewhere else.

Some researchers have suggested a more viable approach: adopting a cultural perspective for implementing educational change. That is -- viewing the process of change from a perspective that begins with the culture of the individual school and the environment within which it operates -- then using the research to determine which innovations to apply within that school's culture.

The culture of a school is more than a shared tradition -- it is essentially the solutions a group of people devise to meet the problems

they face. These solutions become the organizational structure, behavior patterns, underlying belief systems, and meanings that affect the group and the events that take place in a school. Any changes must be perceived by those involved as necessary and workable within the culture of their school. This is what is meant by "ownership" of a problem or solution to a problem.

The cultural perspective requires a longterm view of change and promotes problem identification and the generation, creation, and cultivation of alternatives. Viewing school change from a cultural perspective suggests the following:

1) the locus of change is the individual school;
2) the focus of change should be on attitudes as well as behaviors. The school staff must be prepared to examine critically the assumptions they hold about schooling and to share information about what really goes on in the school.
3) the purpose of change should be to create a school in which the staff constantly works together to examine the school condition, identify problems, and develop alternatives in order to improve the climate for learning.

The cultural perspective also recognizes that multiple changes are likely to proceed simultaneously throughout the school. This type of perspective requires a long term commitment to the change process. It requires cooperative effort between all levels within the educational system rather than an authoritarian imposition of yet another innovation.

It also requires the recognition that education is an interactive system. Manuel Justiz, Director of the National Institute of Education, referred to a systems approach to educational improvement in his address to

the annual meeting of AERA in April 1983. Dr. Justiz suggested that educational improvement should be considered as a problem not only of pedagogy but also of state standards; as a problem not only of school building leadership but also of the principal-selection process at the district level; as a problem not strictly of individual schools but of an entire interrelated system of education.

This does not suggest that the RD&D perspective is unmportant. The results of educational research are an essential guide to what has proved effective, and we need development and dissemination. The cultural perspective simply requires the consideration of the school's culture as a reference point prior to using RD&D.

Today's Symposium on Educational Productivity provides a research background to the problems of school effectiveness. It is in deciding which innovations to try and in planning how to implement those innovations at the local school level that the culture of the school and the nature of the change process become vitally important considerations. We have gathered here today a group impressive for its collective knowledge and wisdom. I am continually impressed with the quality of the dedication and intelligence of those who are in education -- our bad press notwithstanding. I can only conclude that the problems are more complex and the solutions more elusive than the various commission recommendations would lead us to believe.

We offer you the information and ideas. It is your knowledge and wisdom that will determine how those ideas are used.

VARIABLES IN MEASURING EDUCATIONAL PRODUCTIVITY

Dr. Herbert J. Walberg
Office of Evaluation Research
University of Illinois at Chicago

Many studies have indicated that standardized test scores in the United States are going down. First noted in 1968, that trend has been confirmed by such studies as the various National Assessments of Educational Progress. Of the 47 hypotheses for the cause of the decline, the most notable is that a higher proportion of students are taking the SAT who might not have taken it in 1930 or 1940. The important thing, however, is that the public perceives only that the scores have gone down. In addition, the per-pupil cost of public education, adjusted for inflation, has gone from $500 in 1930 to $2,500 in 1978 -- a five-fold increase. This means schools have become less productive.

Educational productivity concerns our whole country. It affects economic well-being as well as quality of life. Fortunately, we understand the educational process better today than we ever have before. Given the national will power and consensus, we can do a lot better in education.

A number of national reports have made recommendations for improvement. For example, the National Commission on Excellence in Education and the National Science Foundation have urged more science and mathematics in the schools. The Twentieth Century Fund and the Carnegie Corporation have emphasized the need to increase the verbal ability of children. Illinois Representative Paul Simon has focused on children's capacity for foreign languages. Combined with these concerns is the ancient dilemma of how to assure excellence and equality.

As a society, we recognize that we live in an age of scare resources. We need to be concerned about two resources: 1) dollars -- dollars for education do not appear to be increasing as they have in the past, and 2) human resources, or as economists say, human capital. Investments in labor and physical capital (buildings, machines) make industry more productive. Economist Adam Smith, in The Wealth of Nations, first pointed out that a country's wealth depends heavily on the abilities of its people. Consequently, investments in people are not only beneficial to the people themselves but also to the nation.

The South and West United States, Australia, Japan, South Korea, Singapore, Phillippines, Taiwan, and the whole Pacific band comprise the fastest growing part of the world today. In the past, the world has had an Atlantic culture, but in the future the world will have a Pacific culture. Much of the reason is that Asian countries, especially Japan, have made wise investments in human capital.

A collegue and I, in a new study using data on students in Japan and Illinois, have found that Illinois students ranked two standard deviations below the Japanese in mathematics. That means the average student in Illinois would rank in the second percentile by Japanese standards. Just as the United States can learn from Japan's labor and management systems in industry, so can we learn from the superior productivity of their schools. Investment in people is a productive use of capital.

Not all capital can be measured in dollars. One of the most fundamental inputs to the educational process is human time. For example, in the first 18 years of life, a child spends only 13 percent of his waking hours in school. He spends the rest -- 87 percent -- in the home or elsewhere. Parents invest in their children -- not just monetarily but

also with emotional support, intellectual stimulation, and encouragement. This suggests that in improving schools we look more broadly at all the investments made in human time.

The only way we can fulfill the recommendations for more foreign languages, science, mathematics, and English is to work harder and longer. Some recommendations call for lengthening the school day or the school year. Japan, for example, has 250 days in a school year, whereas the United States averages about 180 days. In Japan and Western Europe, students go to school for half a day on Saturday and have only about a month's vacation in the summer. Length of school day and year are important considerations. However, we not only have to increase time in school, we also have to make that time more efficient.

To improve productivity, we can look to educational research. Educational research in the United States runs about $100 million a year, a trivial amount compared to research in medicine, industry, aerospace, and agriculture. Even so, research findings suggest some things that can make schools better.

Forty-six quantitative syntheses of 2,800 studies have revealed that nine factors are consistently associated with learning. Learning means short- and long-term learning; cognitive, affective and behavioral learning; learning in general. The pervasive criterion has been how to promote learning, particularly by making it more efficient. These nine factors offer insights into what influences learning.

Aptitude

1. Ability. Intelligence, prior achievement. Many studies have shown that students who achieve well in the second grade also do well in

the third grade and all the way through high school. There is a stability in human characteristics that needs to be taken into consideration.

2. Motivation. Students' attitudes toward school, self-concept, affect.

3. Development. Stage (the continental European point of view, advocated by Freud, Piaget and others), age (an Anglo-American view of continuous development as opposed to plateaus), and maturation (variances depending on a child's developmental level).

Instruction

4. Quality of instruction, or teaching.

5. Time or quantity of instruction. This includes the length of the school day and year. Psychological research suggests that much time in school is wasted -- students come late or are absent, and they have distractions such as announcements. Furthermore, it's difficult to target instruction. If you target it for the middle group, it may be too advanced for the lower group and too easy for the higher group.

Environment

6. Classroom morale. This refers to climate, students' liking for each other, whether they find it's a worthwhile and goal-directed experience. The better the morale, the more the children learn.

7. Peer group outside school, especially in adolescence. This involves the extent to which this group has aspirations to go to college, is of a higher socio-economic status level, and is geared toward learning.

8. The home (not socio-economic status, race nor ethnicity). The curriculum of the home is the important aspect -- the extent to which

adults support the child's school work, teach the child, take the child to museums, read in front of the child, provide a quiet place for study. The fact that achievement levels in the United States are declining may have something to do with the change in families.

9. Mass media; most importantly, television.

How have we arrived at the nine factors? The method was to use the Social Science Citation Index, Education Index, ERIC System and other sources to find all the studies done on educational improvement. When these studies were brought together, they were synthesized statistically. Some syntheses were done at the University of Illinois in Chicago, while others were done at the University of Colorado, Stanford, Harvard, and the University of Michigan. Many studies have been done specifically in science because of grants from the National Science Foundation. For example, we found 396 studies of the relationship of intelligence to learning, 34 of which were specifically on science achievement.

We found 34 studies on time. Six studies related adult test scores to the number of years of education. All six indicated a positive relationship to learning, or 100 percent. Ten studies were on the number of days in the school year. Seven of those (70 percent) were positive. Others were on length of day. We also examined effect sizes[1], or correlations

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[1] Editor's Note: Many of the "effect sizes" cited by Dr. Walberg are correlations. Some of the "effects" cited, however, were derived by the formula,

$$\text{Effects} = \frac{\bar{X}\ \text{Treatment Group} - \bar{X}\ \text{Control Group}}{\text{SD Control Group}} .$$

In addition, the "effect" cited on page 24 is referred to in terms of the standard deviation. Dr. Walberg has suggested that those interested in identifying how an "effect" was derived -- for purposes of comparability -- contact him at this office, 312/996-8133 (personal communication with Dr. Walberg, 12/12/83).

between time and learning. We have taken the ratio of the positive findings to the total findings. Of the studies on time, for example, we found a .91 positive relationship and an average correlation of about .3. We have found that the more consistent the effect, the bigger the effect. A typical effect is .39 or .40. The average effect of socio-economic status (parents' education and income) is about .20.

Productivity theory and economics suggest that we avoid today's panacea or fad, but rather take a broader look at everything in education. The kinds of factors we should be looking for, as Benjamin Bloom says, are alterable factors. We cannot change people's sex, ethnicity, or IQ levels. These characteristics, as well as IQ, motivation, and stages of development, are things children bring to the schools.

Of the nine factors, which have the biggest effects? As many studies have shown, ability is the biggest determinant of how much is learned. (IQ is three times more powerful than socio-economic status.) The average correlation of IQ with learning is .71. The average correlation of IQ and Science Achievement with learning is about .48.

Developmental level or age, quality of instruction, and amount of time all have a moderate effect. Environmental factors, as a group, also have a moderate effect. Motivation is the weakest factor (effect of .25). To say which have large or small effects is somewhat misleading, because they have different effects. For example, some aspects of instruction are extremely effective, so I will deal with those specifically.

Quality of Instruction. The biggest factor in instructional quality is reinforcement, which has an effect of 1.17 (see Editor's note, page 15). It appears that E.L. Thorndike at the turn of the century was right: reward has big effects on learning. One type of reinforcement is

feedback -- the teacher catches and corrects errors children are making. Another type is simply letting the child know that he or she is right. Some special education programs and programs for delinquents use direct reinforcers such as money and candy.

Acceleration has a big effect -- 1.00 -- on learning. This kind of program was popular in the 1950s but is completely unstylish today. The major program is being run by Julian Stanley at Johns Hopkins University. The precedents for this kind of program include the Bronx School of Science in New York City and the Juilliard School of Music. Stanley gives fifth-or sixth-grade children in Maryland the college Scholastic Aptitude Test in mathematics. He isolates the ones with extremely high scores in accelerated programs (they take algebra in fifth or sixth grade and calculus by eighth grade, for example). Because such studies can be susceptible to selectivity, evaluation requires leaving half the children out of the program at random. Most of the studies presented here are randomized field trials. The results cannot be attributed to the selection of smart children because those in the accelerated programs are compared with equally smart kids in regular programs.

Another extremely powerful factor is reading training, sometimes called "speed reading." It is easy to train children to skim and answer a specific question in the text. Because these programs are specific in what they ask a student to do, they have a large effect -- .97.

Programs with an equally large effect are those that use cues, participation and feedback. Mastery learning has been advocated by Aristotle, John Locke, and today Benjamin Bloom. Cues involve presenting the lesson content effectively at the right pace. Participation means engaging children in the lesson, which is often associated with time-on-task. Feedback,

particularly individual corrective feedback, is a form of reinforcement.

Cooperative learning has a rather large effect -- .76. This program was developed by Johns Hopkins and the University of Minnesota and resembles quality circles in Japan. Within a class, small separate groups of five to seven students are formed. To some extent, the teacher delegates the goals of learning and the means for attaining them to the groups. Each group works together and competes with other groups within the class, school or school system. A teacher can mix brighter students with slower ones. This does not handicap the brighter students, because it's a truism that in order to learn something well, you should teach it.

Experimental reading programs have an effect of .60. Much of the research indicates that it really doesn't make much difference which of some 20 reading methods is used. The significant aspect is having teachers focus their energy and time on reading. In other words, the results may be influenced by a Hawthorne effect.

Another program similar to mastery learning is PSI, Personal Systems of Instruction, with an effect of .57. These programs are used more in college level courses of science and mathematics, but are also used in secondary schools. They were developed by Fred Keller, a student of B.F. Skinner. In addition to the use of cues, participation and feedback, the programs may include teachers' lectures and worksheets.

Adaptive instruction has a fairly substantial effect at .45. The leader in this area today is the LRDC, the Learning Research and Development Center at the University of Pittsburgh. This program combines some features of mastery learning with cooperative learning. In other words, some students work alone, some are in cooperative groups, and some are in a whole class.

Tutoring has a big effect -- .40. One dilemma in education is trying to suit instruction to each individual simultaneously with other students. Japan and the United States are the only countries in the world with mass educational systems -- nearly all of our students graduate from high school. In Western Europe, only about a fourth graduate from high school. England, France, and West Germany have been attempting to have a more American system and are facing similar problems. Whatever the case, as the grade level increases, the abilities of the students become more diverse and it becomes more difficult to individualize the instruction.

The advantage of tutoring is that it is individualized. From an industrial or technological standpoint, education today is somewhat primitive. The class is treated as a batch -- all students receive the same instruction, and the individual child adapts to it. Adaptive programs, mastery learning, individualization and tutoring tailor the instruction more to the child. This is an important consideration. With a smaller school age cohort, the result of declining enrollments, perhaps we can use some of our present resources to fit the education to the child, rather than vice versa.

Psycholinguistic techniques, with an effect of .39, are used in special education. These were developed by Samuel Kirk at the University of Illinois at Urbana. A child's profile is obtained on certain competencies and then specific instruction is given for overcoming deficits.

Higher order questions (effect of .34) deal with Socratic methods. Mary Bud Rowe at the University of Florida has researched the problems of asking a profound and difficult question that requires a great deal of thought and the notion of pausing. Rowe has found that a teacher pauses an average of only 9/10 of a second after asking a question. When that time

has elapsed, the teacher repeats the question, answers it, or calls on another student. This finding suggests that such momentary pauses produce superficial answers. If you want good answers, you must have the courage to wait five minutes. Rowe has also found that difficult questions combined with long pauses produce several good results: almost every student is willing to answer, students give longer and more explanatory answers, and students enrich each other's answers by commenting after someone has spoken.

Diagnostic-prescriptive instruction (effect of .33) involves diagnosing a problem in an individual child and providing specific remediation.

New science curricula have an effect of .31. The direction suggested by recent reports is that we may have a revival of the post-Sputnik era. The several dozen evaluations of old curricula, such as Project Physics, found that they had beneficial effects on learning. One was the modernization of high school physics and mathematics curricula and the involvement of first-class physicists, mathematicians, chemists, biologists, as well as evaluation psychologists, teachers and others. The National Science Foundation discontinued supporting the summer and year-long institutes for teachers despite the beneficial consequences that seemed to make these curricula more effective.

Teacher expectations have an effect of .28; an effect is comparable to socio-economic status. "Expectations," also called "the Pygmalion effect," means that when teachers have higher expectations for students, students seem to perform better. From a research point of view, one problem with this is that the cause could also be student ability. If a student is bright, the teacher expects more of him. We cannot absolutely attribute higher performance to a teacher's higher expectations, but on the other

hand, higher expectations certainly won't hurt.

Computer-assisted instruction is the latest panacea. We found it has a small to moderate effect (.24) on learning. However, this small effect may be misleading because most of the studies were done 5 to 20 years ago, when computer-assisted instruction was glorified page turning. New software programs are now being worked out that individualize learning. If, for example, a child has a problem with "carrying" in mathematics, the program has a built-in algorithm -- the program branches to a section that deals specifically with that problem and adapts to the child's needs. In the future, computer-assisted instruction is likely to have a much bigger effect.

Advanced organizers (.23) are programs that basically follow the format: tell the learners what you're going to tell them, tell them, and then tell them what you told them. These programs start with an organized overview of the subject matter, proceed with the presentation of it, and end with a review or conclusion.

Homogeneous grouping (.10) does not have much effect. It doesn't seem to matter whether a class has mixed abilities or narrow abilities. Heterogeneous groups, however, require more individualization.

High school programmed instruction has a small, negative effect -- .03.

Class size also has a small, negative effect -- .09. Research contradicts what most people believe about class size. In 1930 we had about 31 students per class, and today we have half that -- 17. Class size involves money because 80 percent of school operating budgets goes for salaries, most of which are for teachers. Glass, Cahan, Smith, and Tilby at the University of Colorado, who synthesized 77 studies, found

essentially that class size has to be reduced to about 8 to 10 students to get any substantial benefits. A class of 16 students might as well be 60 as far as learning is concerned. On the other hand, reducing a class to 2 or 3 students is tutoring, which produces big effects. What schools have done is purchase smaller classes at the expense of other, more effective things. However, parents may prefer small class size and want to spend their money that way.

Mainstreaming has a negative effect of .12 on special education students.

Time spent on learning has an effect of .38. Many recent national commission reports have emphasized time. In my view, spending more time on learning has an average effect. Learning involves many ingredients. The solution is not just more time, but also higher quality of instruction -- a balance.

The studies on quality of instruction tend to emphasize cognitive outcomes. Some have behavior outcomes, such as speed reading, and some have the students' attitudes or affect. Some have used the criteria of whether the student is planning a career in that subject or has expressed an interest in further study of the lesson -- sustained motivation. But nearly all those studies have standarized tests or locally made tests as the chief criterion.

One of the greatest panaceas in the last several decades has been open education. Open education has a small effect on achievement -- near zero -- and perhaps a slight negative consequence on standardized tests. What happened to open education is similar to what happened to John Dewey's progressive education -- the idea that the child and the teacher together formulate the ends of education and develop a contractual relationship. By

the time Dewey's idea got to Teachers College, Columbia, it tended to be permissiveness. It reflected Jean Jacque Rousseau's philosophy that the child is a noble savage and society corrupts. The idea of open education was to give a child responsibility for formulating a learning project, choosing colleagues to work with on projects, or choosing the pacing. Open education placed less emphasis on factual learning and more on the ability to plan, work with other people, and complete a project on schedule. Studies show that open education had a big effect on the ability to work cooperatively as well as independently, and, to the extent it could be measured, creativity. The best synthesis on open education, by Gage, Olkin and Hedges, reflects 153 studies, a number of which have problem-solving outcomes as criteria. I don't urge a return to open education, acceleration, or any one program. What I am suggesting is that many programs have extremely beneficial effects and, depending on what our goals of education are, we should use the programs that match these goals.

Environment

Environmental factors include classroom morale, the peer group outside school, the home, and mass media, or television. Classroom morale is extremely important, with an effect of .60. Another finding from our studies in Japan, sponsored by the National Science Foundation, is that the Japanese have some sense of morale and teamwork. They don't have a great gulf between management and labor, nor between various groups -- it's a more homogeneous society. One of the most destructive things in classroom morale is to treat some students differently -- boys favored over girls, or a group from one part of town over those from another. If a teacher treats students badly but treats them alike, it's not as destructive.

The peer group is not a powerful factor, but it definitely has some influence.

Home environment has an effect of .37. Next to intelligence, this is one of the most powerful factors in determining the amount learned. We define home environment as the curriculum of the home -- the extent to which parents encourage the child intellectually, support schoolwork, become informed about it, talk with their children, try to build their vocabulary, and so on.

The studies on home environment were passive studies -- related to how well children achieved in school on various standardized tests. By contrast, home intervention programs are initiated by a school staff, who invite parents into the school and give them learning activities to do with their children. This factor has an effect of .50, half a standard deviation, which is a moderate to large effect. Importantly, the effect is just as large for older children as for younger children. These studies were done in urban and rural areas and among different ethnic groups. For example, in one study I evaluated in Chicago, the district superintendent had parents brought in, they formed study commissions, and they were given instructional materials to use with their children at home. Each child had a contract -- signed by the superintendent, principal, parents, teacher and child. Local business people made contributions for books, which parents traded once a month in book fairs. Teachers gave daily or weekly reports on the child's progress and gave parents specific assignments to work with a child at home. One important point about these programs is they lasted only 6-8 weeks or 2-3 months at most. To achieve so large an effect in such a short time suggests that encouraging a better relationship between home environment and school would help increase efficiency.

Television has a small negative effect of .05. This effect was derived from a synthesis of 23 empirical studies linking amount of television watched with what the children learn. The more children watch television, the lower their achievement levels. Maybe younger children get some vocabulary development from television, maybe older children get some substance from watching "Nova" or the news and discussing it with their parents, but it's definitely not as good as reading and it's fifth-rate when compared to concerted homework.

But television is not an overwhelming factor. The apparent dangers of television are that it is 1) passive and 2) not reflective. For example, studies of "Sesame Street" have found that middle class children benefitted more than poor children because parents tended to discuss the programs with their children.

Another concern is that television displaces homework. I recently authored a study in the Educational Researcher that analyzed one of the largest data bases ever made, High School and Beyond, (the new Coleman Report on private and public schools), involving some 28,000 students. On the average, American high school seniors reported they do 4 1/2 hours of homework a week and watch 4 1/2 hours of television a day. If we want to improve learning, those figures have to be reversed. By contrast, some Japanese students are spending 60 hours a week on homework. No matter how smart you are, every great accomplishment in life takes many hours. They say in Japan, if you don't understand it the first time, read it 100 times and you will understand it. So diligence and hard work need to be considered.

From a series of computer searches in Education Index, Social Science Citation Index, ERIC, and several other sources, we found that since the

turn of the century, 400 articles have been written on homework, most of which are highly opinionated. Only 15 studies measured the effects of homework. Two articles -- in Ladies Home Journal and in School Review (now the American Journal of Education) published at the University of Chicago -- said it was wrong to send a child home with heavy schoolbooks and noted the possibility that children might make a mistake. That reasoning stems from the agrarian society prevelant in the United States at the turn of the century. That reasoning also underlies the length of the school year, with time off in the summer for harvesting. Study halls were introduced in high schools so teachers could supervise homework.

In the 15 non-opinionated studies, homework had an extremely large effect. Graded homework had an effect of .79, while assigned homework had an effect of only .28. The effect of graded homework is as big as any of the quality effects and twice that of time. The important point is that this factor is alterable. I am not saying that teachers can just assign more homework. Schools function within the larger society and control only 13 percent of the child's time. Assigned homework requires motivated students and parental support. Homework is a good investment of the child's time. If homework detracted from sports or peer relations, I would be more reserved in recommending it, but what homework actually takes away from is a discretionary 27 hours a week that children are spending watching television.

It may seem alien to think about education as a productive industry, but we have to if we want to make it more efficient. One of the noblest enterprises in the United States is agriculture. At the turn of the century, perhaps 80 percent of Americans lived on farms. Now it's only a few percent, and that small percent feeds the whole country and substantial

parts of other countries as well. The quality of agricultural products has improved, the quantity keeps mulitplying from year to year, while the labor input goes down. The agricultural sector does not say, for example, "this year we are going to emphasize irrigation, so we're going to flood the fields." Similarly, in education, one has to look at all the factors simultaneously because learning does not occur simply as a result of time, but also of motivation and the quality of instruction. We need to think in terms of production functions: what is the optimal mix and how can we raise all factors in a systematic way?

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VARIABLES IN MEASURING EDUCATIONAL PRODUCTIVITY
DISCUSSION OF IMPLICATIONS

This "Discussion of Implications" section summarizes the group discussion that occurred after this presentation. Since many of the participants' comments centered upon several key issues, the issues are presented in question form and underlined in the text. Although this record does not represent a verbatim account of the session, it does provide a summary of the issues that the participating educational leaders found most engaging and vital to educators in the six-state region.

Have any of your studies dealt with the tension between whole-group and individualized instruction and where the happy balance might be?

Both whole-group and individualized instruction are beneficial, and, if well-designed, individualization is perhaps the most effective. But individualized instruction is difficult to carry out, especially for a single teacher with 25 students, each of whom has a different problem. If computers were used to individualize -- more than they have been used in the past -- they might be extremely effective. Also programs such as mastery learning and adaptive education have a good record for individualizing or using small groups.

On the other hand, Barack, Rosenshine, Tom Good, and Jere Brophy are advocates of direct instruction. That approach involves teacher lecturing and some discussion, but it's basically a more authoritarian and whole-group process. It's been known as the recitation method since the turn of the century. If it's well designed and done with some sensitivity, that can be quite effective as well. Teachers need an amount of personal

latitude. If some teachers like one method better and are enthusiastic about it -- even if it's inherently not the best method -- it can be a good method because people will work harder on it.

The impact of reinforcement alone on learning is 1.17, but when reinforcement is combined with the cues, participation and feedback complex of the mastery teaching approaches, the impact goes down to .97. Why is reinforcement alone more powerful?

One caution in interpreting effect sizes is that researchers have to factor in how fuzzy or precise the variable is. Reinforcement, for example, is a precise measurement and shows a large effect. But in adaptive learning, the researcher is measuring a fuzzy variable, so the effect is not apt to be so large.

Furthermore, not only is the independent variable fuzzy, but the outcome is fuzzy, too. A common way to measure outcome is standardized achievement scores and grades. However, students who get high grades in higher and professional education have only a small edge in performance as adults, according to a study coming out in the American Education Research Journal. Adult outcomes include numbers of publications, in the case of scientists; patents, in the case of engineers; income or occupational level, in the case of businesspeople; that elusive phenomenon, happiness (or at least self-rated happiness); and supervisor ratings or self-ratings of success. Often people who get low grades are almost equally likely to achieve happiness and success as adults.

However, apart from these qualifications about measuring effect sizes, one would think that reinforcement, when combined with cues, participation and feedback, would be more powerful.

One explanation, and it's only a speculation, is that many of the reinforcement programs have used very powerful reinforcers such as money and candy. This is fairly strict Skinnerian behaviorism. Furthermore, some of these programs have been done with only a few children and with delinquent children and children with behavior problems. The programs use powerful incentives: if you don't do this, you're going to be denied something you want very much. If reinforcement were combined with some of the other factors, the result might be a bigger effect.

All of the studies described earlier were in conventional, ordinary schools. However, a great deal of work is going on today in what might be called "world-class" performance. What does it take to make a Mark Spitz? to get to the Juilliard School of Music? to be Bobby Fischer in chess? to become a neurosurgeon? to win a Nobel Prize?

What this work suggests is that a student must have all nine factors and each one has to be very high. If a student is down on a single one, it can be a great detriment. If we take one person out of a million, one student out of 100,000 or the seven best students in Texas at a particular subject, what is it about those students that make them the best? All the nine factors are present. They have high motivation, they have the best teachers or coaches, and they work at it.

Some results indicate that if you want to be world-class in any field, you have to work at it for 70 hours a week for 10 years. That is a ballpark figure. It may be half that or it may be twice that. A world-class achiever must also have extremely supportive parents. In the case of Olympic swimmers, for example, their families often move to California to take advantage of some of the best coaches and the climate that allows year-round swimming. These families are willing to make great personal

sacrifices of themselves and of their other children. Having one child achieve world-class status unfortunately requires favoritism. The point is that attaining world-class status requires putting all nine factors together.

In the studies on reinforcement, do the results reflect short-term learning that may show up on tests administered fairly quickly rather than retention and long-term learning?

One legitimate criticism of reinforcement studies is that they measure short-term learning. Much of the work of B.F. Skinner was done with rats and pigeons and measured short-term effects. Studies with the most difficult children -- those who have been in jail, who are delinquents and who are severe behavior problems in the classroom -- demonstrate that if one strongly and powerfully maniuplates incentives, one gets vast changes in behavior. But as William James said, it's intrinsic or continuing motiviation that's important. Many reinforcement programs may have fade-out effects. It's doubtful that researchers went back five years later to find out if those reinforcements had beneficial consequences.

On the other hand, reinforcement probably doesn't make things worse. The best approach may be eclectic. No single program -- even reinforcement, which had the biggest effect -- is the only solution. Many factors in instruction, such as teacher expectation, deserve consideration.

With the emergence of cable television, you can get a documentary almost any time you turn the set on. What effect could this have on learning?

Cable television has great potential for making a positive impact on education. Cable television offers more local programming, more variety of programming, and a greater capacity for citizens, including parents and students, to select rather than be given only one choice.

Television could be used much more effectively in schools. A great deal of evidence, not just from the United States, but from Third World countries -- Africa, Asia and South America -- suggests that television and radio are extremely effective in reaching many people over a large geographical area at a low cost.

The problem with television, however, is that it is fundamentally passive. The original purpose of "Sesame Street" and "The Electric Company" was to reduce the gap between middle class and poor children. Evaluations done by the Educational Testing Service in Princeton, New Jersey, found that television, especially "Sesame Street," had positive impacts on all children, but had bigger and more positive impacts on middle class children. So it actually increased the gap. What it illustrated was that middle class parents tend to talk with their children more and encourage their children to reflect upon what they have seen. So it was the child's active participation, discussing and thinking about the programs, that seemed to be the key element.

Cable television can be designed in this way so that parents can have some choice in what they watch with their children. And cable programs might be coordinated with what's going on in the school. If that happens, cable could have quite beneficial effects on children's achievement.

On the other hand, cable television could also have a negative effect. In the past, viewers often had to wait for a week to watch documentaries such as "Wild Kingdom" or "Cosmos," but now viewers can watch

these programs almost any time they turn the set on. Regardless of the quality of program, if students spend too much time watching television, it can have a detrimental effect on learning.

Another overlooked aspect of television and schools is the use of time. High school students watch television 27 hours a week. If they spent that time in the library or reading, it would be a much more effective use of their time.

So many things in the home can affect learning. In studying the effects on achievement, where do you draw the line on the variables in the home?

The family and the school may be arbitrary social institutions. There is no reason why children can't learn at home. Some parents today are teaching their children at home. In the future, computers may be available in the home. We may have to rethink these institutions and their functions. The factors that promote learning in the home are the same factors that promote learning in school. The two can be parallel or coordinated. For example, children can receive reinforcement in the home and they can have the influence of parents' high expectations.

Perhaps it is inappropriate to do some types of research in the home: that is, to ask about physical objects, "How many of the following objects do you have in the home -- encyclopedias, dictionaries, toaster, washing machine, television set, video recorder?" The underlying idea is that such physical objects in the home might be conducive to more learning or might be labor saving so that the parents could spend more time with their children.

A better way to do research in the home is the way Kevin Marchbanks and a number of other investigators do -- they actually go into the home for about two hours and have an extensive interview, preferably with both parents. They ask questions such as, "Do you talk to your children at mealtimes about where you're going to take your vacations? Do you display examples of the child's schoolwork?" They rate the parent's vocabulary. They look specifically at the teaching characteristics the parents might display with their children.

Many factors are operating in the home that have an effect on learning. Parents may motivate their children subconsciously or unconsciously, simply by earning $30 an hour in a profession and coming home happy. The home may well have a greater effect than research shows.

How can we as educators be more effective in working with parents to help children learn? How can we show parents how important the home environment is?

The first step is to be more modest in what educators claim they can achieve. The 1950s were an era of compensatory education. It was believed that the school could completely overcome the effects of poverty on children. Today we know that's not possible. The school is not so powerful an organization, nor does it have the majority of the child's time.

The second step is to recognize that this problem may go beyond education itself. This country has many more single parents and more divorces today. Population trends also play a part. The baby bust, for example, is the reason so many schools have closed. The fact that fewer children are being born has an impact on debts this nation incurrs. Specifically, in 1950 there were 16 working people for each retired person; by the end of

the century there will be only 2 working people for each retired person. The children of today will support us in the coming decades. Not only are they a smaller group, but also they appear to be less able (based on lower scores on tests in science and mathematics) than those of previous generations. If we can believe studies of international education, American children are less able than children in other countries. This means our national welfare is at stake. We have to acknowledge the seriousness of the problem.

Educators can provide the curriculum and the instruction and reach out more to parents and society. Many types of intervention programs can be used to reach out to parents and change their attitudes toward school. But whether society will do that is a far larger question.

HUMAN RESOURCE MANAGEMENT IN EDUCATION

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Recent studies on school effectiveness have focused attention on the role of the principal. The rationale for focusing on the principal is fairly straightforward: in most American schools, the principal is entrusted with the responsibility for establishing appropriate goals, setting and maintaining standards of excellence, and ensuring the efficient use of human time and effort.

What is the present condition of principalship? The research has examined school climate, the quality of the program, how well a principal gets along, student achievement, and the orderliness and cleanliness of the school. However, virtually no data exist that document the quality of leadership of school principals. My perception, based on my experience in several states and buttressed by colleague opinions, is that, although a number of principals are providing remarkable leadership, the majority of principals are marginally efficient at best. While our principals by and large do as good a job of management as any middle managers across the country, they don't do a good job of leadership.

Lack of leadership is not the fault of principals. The typical principal has been poorly trained. At Iowa State we train students for survival. They take 34 credit hours that will get them through their first three years on the job. Then there is the matter of readiness. Just as most 19- and 20-year-old teachers have to gain actual experience in the classroom before they are ready to learn the real art of teaching, most principals

must spend two or three years on the job before they are ready to learn about leadership.

The principal's job is the toughest in middle management in America. It's not clearly defined what principals are to do nor how they are to do it. The real world of the school administrator is pressurized, fragmented, and hectic; problems typically are contained instead of solved; he or she must deal with custodial problems such as drippy faucets; and the decisions that are made are often clouded by values and made with incomplete information. In a typical day, a principal has 50 to 80 interactions, each lasting about nine minutes. Most of a principal's activities are other-initiated -- somebody comes to his or her office usually with a trivial matter. A principal spends 70 or 80 percent of the day in one-on-one interactions and only 20 percent in group dynamics. But the Pareto principle applies: that 20 percent may account for 80 percent of a principal's relative efficiency or effectiveness.

With so much of the day spent in decisionmaking and one-on-one interactions, principals want something specific, something that will solve their problem right now. They like one-pagers, pocket references, and checklists, such as the classroom observation guide for evaluating teachers that I have developed for principals. It lists questions to ask before the lesson and before gathering data. Principals need similar materials for the post-observation conference.

Another reality in the condition of principalship is the change in client needs and preferences. John Naisbitt was right in his observation in Megatrends: "Never before in this country has there been such a significant grassroots movement," and this movement has created public demands on the local school systems. As a result, the typical principal is being

pushed and pulled by pressure groups. AT&T has to be receptive to the needs of its clients, but it hires specialists to make cost-effective decisions before proceeding. Principals don't make cost-effective decisions easily because such decisions may not be popular with the constituents.

A principal's clients include students who charge in the front door with strong egos as well as students who sneak in the back with weak egos. Gifted and learning-disabled students occupy the same classroom. Sometimes talents and learning disabilities inhabit the same mind and body. That is a special challenge.

The research compares schools that have similar inputs -- student, teacher and socioeconomic characteristics -- but have different outputs -- better scores in school A than in school B. The research has its weaknesses -- some have questioned it as biased -- but it's the best we have. Basically, the research suggests that an effective principal coordinates instructional programs, emphasizes achievement, frequently evaluates pupil progress, provides an orderly atmosphere, sets instructional strategies, and supports teachers. Many of these skills cannot be clearly defined. No one knows exactly what they mean. However, certain managerial skills are implied. Managerial skills are of three types: technical, human and conceptual. Simply put, these skill-types describe one's ability to deal with things, people and ideas.

There is no question that principals need certain technical skills -- a firm grasp of the principles and processes involved in curriculum development, teaching and learning, and formative and summative evaluation of personnel and programs.

Teaching and Learning. The typical principal doesn't know much about teaching and learning. Madeline Hunter has probably made a bigger impact

by helping administrators understand the teaching and learning act in the last three years than anyone in the previous 30 years. Concepts are presented in a language principals understand, and a commitment to training time is emphasized. Unless a principal has a reasonably firm grasp on teaching and learning, he or she cannot do a reasonable job in evaluation.

Evaluation. Teacher evaluation has improved greatly in the last 15 years. No longer do principals have the annual showdown, nor do they evaluate teachers on such factors as the height of the blinds. Critical to the teacher evaluation process is the post-observation conference. A principal may have done a perfect job of pre-observation conferencing and data-gathering but unless he or she has that consummate skill of sitting down and being able to get a teacher to examine his or her own effectiveness, then it's a waste of time. The typical principal has never had training in how to conduct a post-observation conference. He or she may have read a few books but usually has had little training and almost never has had any guided practice. If we believe that the theories of learning hold true for training as they do for teaching, then guided practice is one thing principals ought to have.

The evaluation of programs is a virtually unexplored area. Evaluation is the bottom line: is the school doing what it's supposed to do? We can't just look at standardized test scores. The next best thing is an indirect measure -- some kind of formative and summative evaluation of the intellectual program of the school. We have not trained principals to do this kind of evaluation, although new materials and methods are coming out that hold much promise..

These technical skills -- except for communication -- are the nuts and bolts of instructional leadership. Training principals in these skills is

a simple matter of getting them in, teaching it to them, and turning them loose. They need handouts and concrete ways to do it.

America has exemplary schools and can learn a great deal from them. In my work with the School Improvement Inventory, which uses a rating scale of 1 to 8, one school principal had these high ratings:

supports teacher 7.7

evaluates pupil progress 7.3

coordinates instruction/curriculum 7.2

emphasizes achievement 7.4

provides orderly environment 7.6

This was a female, junior high school principal in northern California, with an average staff and average kids. By contrast, the principal in a district right next door rated extremely low.

This instrument has been used in 150 schools -- large, small, rural and urban -- in California, Indiana, Illinois and other states, with perhaps 5,000 teachers. The majority of data was collected in the spring, a time when things in school are normal. The norm for principals in instructional leadership activities are:

supports teachers 5.8

evaluates pupil progress 4.95

coordinates curriculum/instruction 4.83

emphasizes achievement 4.87

provides orderly environment 5.92

Principals always think the environment is better than the teachers do. Communication is a major problem. Because principals sometimes don't communicate with the faculty about what they're doing, the teachers are critical. We don't have great problems with "order" in schools. Rather,

we have a media communication problem. Newspapers and television focus on what happens in urban schools. It makes good copy and sells a lot of newspapers. In reality, the average school is well-ordered, and the principals are doing a good job in this respect.

Although they rate fairly well in managing the environment and supporting teachers, principals are deficient in curriculum and instruction matters. When you ask the typical faculty member what he or she talks about in faculty meetings, it's not curriculum. Instead, they talk about the environment and maintenance -- how to stop students from smoking in the bathroom, for example.

Ratings of different school districts turn up interesting findings. For example, in one set of ratings, one district stood clearly above the rest. The main difference was an outstanding assistant superintendent, a person with a firm grasp of what should be happening in that district. Consequently, we cannot overlook these assistant positions in our quest to improve schools.

Conceptual Skills. Apart from technical skills, principals must have good conceptual skills. These are skills in decisionmaking, planning, change, problem solving and staff motivation.

Typically, principals are good decisionmakers -- at least in singular matters. The universities do a reasonably good job of preparing principals in this regard. However, the typical principal does not know how to make decisions in a group setting and will avoid doing so. For example, a superintendent in Oklahoma could not get the principals of four large high schools to talk to the 75 to 100 teachers in their schools and really interact on any substantive matters -- such as how to do a better job at individualization. Facing a staff of 100, leading a discussion, and

guiding the group to a decision is admittedly a challenging task. Principals have numerous issues to pose for group decision, but they don't know how to do it.

Related to decisionmaking is problem solving. Principals don't know how to do problem solving with their faculties -- whether the problem is substandard student achievement or any other complex matter. Equally important is problem formulation. Principals should receive training in identifying a problem as well as solving it. Training for decisionmaking and problem solving is like that for technical skills -- bring them in, teach them how to do it, perhaps give them some guided practice, and then turn them loose.

Most principals teach themselves how to organize, but they can't teach themselves how to plan. Planning -- particularly contingency planning -- is critical because state departments of education and others cut the budget every year. Principals do not know how to contingency plan, how to use Delphi techniques, how to use nominal group techniques, or how to group plan.

The school principal is a primary change agent. Change is integral to the job. However, most principals have had no training in how to effect change or any courses in change theory. They don't understand the whole business of freezing and unfreezing or working with groups. They also have no idea how long change takes. In North Carolina, I asked an administrator how much concentrated work one needs to give a marginal teacher before making a decision about her. He said two weeks. I suggested 6 months to two years. That length of time is necessary a) professionally and ethically, and b) legally.

Principals typically have had some training in motivation theory but they are not prepared to deal with the tremendous shifts that have come about in society. As several authors have pointed out, half the American people today value recreation as much as they value work. That is a huge shift in the work ethic, and it requires a different orientation from management. What brings meaning to people's lives? 1) one's family and 2) one's work. The talented, well-taught, well-trained principal knows how to use these motivating factors in managing staff.

What School Faculties Want. From an examination of critical work activities in 40 schools and school organizations (primarily public), we found that faculties rank the six functions of principals in this order of importance:

1. Human resource management
2. Learning environment management
3. Instructional leadership
4. School-community relations
5. Pupil personnel (essentially principal meeting with students)
6. Non-instructional management

Teachers want the learning envirnoment controlled and they want some help in motivating students. But must importantly they want to be stroked, to be recognized and to hear that they are good teachers.

Instructional leadership is a mixed bag. In some schools veteran principals with 15 years experience are using the principles of teaching and learning to work with staff every morning from 7:30 to 8:15. In other schools, teachers feel confident with their instruction and look to the administration for help with other matters. A faculty's preference for instructional leadership may lie in how the term is defined.

How do faculties rank their principals' performance? It varies, but this is how it generally turns out:

1. School-community relations
2. Non-instructional management
3. Learning environment management
4. Human resource management
5. Instructional leadership
6. Pupil personnel

The perceptions of a principal's effectiveness may vary according to the group doing the ranking. In one study, for example, the central office and administrators rated principals high in managing student behavior while teachers rated them low. Similarly, the central office and teachers rated principals high in non-instructional management while administrators rated themselves low. One thing remains constant; principals rate themselves higher than do their teachers.

Climate. Technical and conceptual skills will have little impact unless principals are able to utilize people skills. Productivity is achieved through people. Research has shown that in America's best run companies a set of shared values guides the organization to success. Similarly, effective schools have a set of shared values. They have a climate. As Edmonds says: "How teachers, administrators and students behave in a school's setting matters and accounts heavily for determining a school's effectiveness. The social climate of a school is very important." Bruce Joyce, in Structure of School Improvement, says, "Basically, if the climate is not right, nothing will be right."

Up to this point, if you asked somebody what climate was, he or she would probably have said, "It's the affective atmosphere in the building;

it's a feeling." That's true, but we have now identified five specific aspects of climate:

1. Cohesiveness, or collaboration, or cooperation. The issue is not whether or not teachers like to go on picnics together but whether or not they are able to work together on curriculum and instruction and solving school problems. Complete consensus is not a requirement. The effective principal makes a decision after consulting the faculty and then sells it. The objective is always to move as far as possible toward consensus, but it is not always practical to wait until everyone agrees.

2. Expectations. Several schools in Iowa that are using TESA (Teacher Expectations for Student Achievement) are surpassing standardized test scores. TESA, which started in 1971, involves teachers observing their peers and giving feedback on how they communicate high expectations in the classroom. The research on effective schools and teachers has always identified the association between high expectation and student achievement.

3. Esprit -- feeling of satisfaction among faculty. Do they like to come to work in the morning? Do they think they're doing something well?

4. Goal orientation. In Creating Effective Schools, Lezotte, et. al tell principals how to establish building-level teams and set goals. The chapter on setting goals is well written but it won't work. Some schools can use it as a model but schools are different and have diverse clientele. What makes a difference is the faculty knowing where it's going and being committed to that direction.

5. Leadership. Leadership entails pulling everyone's differences together, having a discussion, getting people to work together, and getting the job done. The effective principal has a philosophy; he or she believes

in something, whether a method of instruction or method of leadership. The principal gets all the input possible, makes a decision, and never looks back.

From our research, we have found the six effectiveness measures are correlated with the climate factors. For example, for "cohesiveness," human resource management accounts for 50 percent of the variance and non-instructional management accounts for minus 14 percent. This may mean that the poorer a principal is in non-instructional management, the more teachers work together -- they have to in order to survive.

In "goal orientation," human resources management accounts for 42 percent of the variance while school-community relations accounts for 8 percent. One interpretation of this is that when a community says it wants writing scores to be raised, that gets everyone's attention, including the faculty's. For "esprit," human resource management accounts for 54 percent of the variance.

Future efforts should concentrate on two areas. The first is helping the principal maximize effectiveness in one-on-one interactions -- with teachers, parents, and students. This is not sensitivity training, rather it is good communication techniques and interpersonal skills. The typical principal is starved for training in one-on-one interactions. In a project that I am presently working in with a school system of 5,000 students, 40 administrators were given six hours of training in post-observation conference theory, conference climate and associated topics. The trainer then videotaped post-observation conferences, shared these among the administrators in small groups, had them give each other feedback, repeated this, and then had the administrators watch the videotapes in large groups. During the formative feedback session after the third week of

training, the principals said: "This is the best thing I've done -- to see and hear myself and how I communicate with teachers." This is guided practice, long-term rather than short-term.

The second area involves a good understanding of group dynamics as well as a firm handle on how to manage groups -- structure, theory, training and practice. Principals need to get faculty commitment, and they can't do it in their office or one-on-one. Principals with a faculty larger than 30 have to be able to manage that group interaction.

Where to go from here? The North Carolina Institute for Principals is a good training program, especially for people in sequestered areas. Principals in small rural schools tend to be culturally deprived. The large schools have their academies and training programs and have enough resources to provide good training. Accountability is important. The only agency I've seen that is really accountable for training is the Detroit Management Academy. It does a good job of evaluation and builds the program a year in advance. The Academy gets the best people it can get, and is willing to pay for them. These and similar programs offer us direction and hope.

This "Discussion of Implications" section summarizes the group discussion that occurred after this presentation. Since many of the participants' comments centered upon several key issues, the issues are presented in question form and underlined in the text. Although this record does not represent a verbatim account of the session, it does provide a summary of the issues that the participating educational leaders found most engaging and vital to educators in the six-state region.

Cohesiveness or collaboration, which you mentioned as the first aspect of school climate, would lend itself to compromises on the part of the individual. Wouldn't cohesiveness then be a form of consensus?

You can't possibly get consensus without compromise. The effective principal has the ability to bargain, manage conflict, and do many other things to achieve consensus and get people to collaborate. The problem is how we help principals develop those skills.

Cohesiveness is a broad term that helps to characterize schools with good climates for learning. One has to understand, however, that big differences in administration exist between the levels of education. Elementary schools are much better run than high schools. The most poorly administered educational institutions in the United States are colleges and universities. One reason is that elementary schools are smaller than high schools. It's easier to get cohesiveness with a staff of 30 than with a staff of 70 or 80.

A second factor is increasing depersonalization in institutions. Doctors no longer treat patients, they treat diseases. In the same way, teachers teach physics and chemistry, not students. The trend is toward departmentalization and specialization. Even in middle schools and junior high schools, teachers are wanting to teach science or mathematics rather than students.

Another part of the problem is the way decisions are made in schools. In American education, as well as in industry, many decisions are made at the top and filter down. That may not be the optimal way to do it. Perhaps we can learn from the Japanese method of consensual decisionmaking. This method embodies the idea that the people who will be affected by decisions should have some part in making them. Decisions come from the lowest level of the organization and filter up. Decisions go through an approval process, and at points along the way resource allocation questions are considered.

Interestingly enough, many ideas the Japanese are using came from western Europe and the United States. The Japanese have adopted scientific and engineering techniques. They have borrowed industrial management ideas, such as Theory X and Theory Y, and ideas of such people as Kurt Lewin, who was very interested in social processes and group dynamics. One of the most important ideas they have absorbed is consensual decisionmaking.

Consensual decisionmaking may be the technique to use in American schools. Bringing people together -- teachers, principals, central office staff, parents and the community -- has been easier at the elementary level than at high school. That's why national commissions are so concerned about high schools and probably wisely have given up on universities.

Is it your perception that people entering the education profession have a different ethic than those at the turn of the century, who may have been missionary in intent?

Of course. The private sector has found that out the hard way. Businesses are having to consider such changes as the three-day work week. Why? So people can have more lesiure time. Likewise, principals say that teachers aren't like they used to be. The truth is neither is anyone else. Books have been written about the shifting plates of culture in this country and how they have dramatically affected all of us. That's why so many need retraining.

There are some politicians who want the same modus operandi that were around in the 1950s but those politicians are wrong about some things. We can't return to old procedures. They won't work in 1980, especially in schools.

What do you regard as the modicum of understanding a principal must have to evaluate teachers? Do you have any way to find out who has that level of understanding?

Principals need to know something about curriculum. However, they do not have to be able to pass every test that their teachers give. Principals should be human resource managers. Human resource management is not knowledge of subject matter. The first step in human resource management is to establish a climate for effective schooling. Part of that is knowing something about the curriculum process.

To evaluate teachers, principals need to understand what effective teaching is, but it's hard to quantify what that modicum of understanding is. They need to understand the framework for effective teaching. But

they don't have to memorize the 165-page Florida manual of effective teaching behaviors. Principals also need to understand the factors in educational productivity. They can acquire much of this understanding by reading, and a great deal of good literature is available.

Training at Iowa State does not involve pre- and post-testing; perhaps it should. Evaluation of principals generally relies on the perception of the staff development instructor. Experience -- if principals have had wide exposure to good teaching and looking at the teaching act -- also plays a part.

The common mythology is that principals don't want training and they hate it. That's not true. They do want it. They're straved for it. Principals sometimes say, "Most of us know what to do, but we're not sure how to do it."

In training principals, what kinds of materials do you use for principals to make observations?

Iowa State makes video tapes for training administrators. This is a good method but it takes three or four months and it is expensive. A new tape made last summer, for example, cost $25,000. Iowa State also uses live classrooms, which principals seem to like better.

Regardless of what kind of training you offer, as policymakers, you must understand that you have to be able to stand the heat when you present training. Principals don't like practice, practice, practice. Neither did the Green Bay Packers when they won the championship. But it works.

Principals can learn about effective teaching by just looking at it, if they have a chance to examine what's going on. If teaching is an art, it would be hard to get that artistry out of reading the research of

someone like Rosenshine. He can tell us the effect of teaching behavior but not the context. Learning about effective teaching takes practice, practice, practice. And one has to have good people to be able to sell administrators that.

ANSWERING QUESTIONS ABOUT THE RESEARCH

Dr. Donald E. Mackenzie
Maclin Information Services
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To bring together the research on what makes schools more effective and productive, the Regional Planning and Service Project of the Southwest Educational Development Laboratory commissioned the synthesis, School Effectiveness Research: A Synthesis and Assessment. What is evident from the review is that researchers have made tremendous strides over the past 10 years in making their research more relevant to teaching and learning at all levels of education.

In this session, Dr. Mackenzie focused his remarks by responding to questions raised by the participants. The participants' questions centered upon several key issues presented here in question form and underlined in the text. Although this record does not represent a verbatim account of the session, it does provide a summary of the issues that the participating educational leaders found most engaging and vital to educators in the six-state region.

Research studies tell us what makes for effectiveness in schooling, but few studies tell us exactly how to do that. As stated in your synthesis, successful implementation of knowledge often represents conceptual as opposed to direct applications of a method. Are there specific studies that give the "how" to people who are not willing to believe that teaching is an art but really want to know what techniques they can implements?

Research not only describes what makes for effective schooling but also in many cases suggests techniques for how to do it. Some examples of attempts to apply research findings include: 1) Bruce Joyce, Michael McKibbin, and Richard M. Hersh (The Structure of School Improvment, 1983); Wilbur Brookover's work; Rolf Lehming and Michael Kane (Improving Schools: Using What We Know, 1981); and Ronald R. Edmonds (Implementing the School Effects Research, 1983).

In addition, the literature on teaching effectiveness is often practically oriented. Good and his associates (Active Mathematics Teaching, 1983), for example, incorporate principles that have come out of teaching research. The same is true of Jane Stallings (Creating Conditions for Effective Teaching, 1981). Schools can gain access to the variety of available techniques through centers, such as SEDL. What emerges from the research literature is not that it doesn't make any difference which method is implemented, but that the way it is implemented is more important.

In addition to existing how-to literature, one can use the research to write a one- or two-page checklist of elements that should be considered in evaluating a teaching improvement plan. The checklist would include an item about the number of approaches used (a teaching improvement plan should not rely too much on any one recipe). Another item would be full faculty involvement in inservice training or curriculum redesign. Unpublished work being done at the Educational Research Center in Wisconsin on the question of how to implement school reform says much the same thing -- that productive involvement of the entire building staff is important. Getting that involvement may be easier said than done. The fact is that school improvement is going to be effected not on the basis of curriculum A, B or C, but to the extent that everyone gets involved. Furthermore,

it's probably better to latch on to method A, B or C and do something with a school district than to leave things as they are.

The science of research always tends to lag behind the art of teaching and administration. Most of the answers to the hard questions about what to do in the schools are in this room right now. It's a matter of getting people together at the state, district and building levels and asking: "What do we want to do?" and then saying, "Let's do it." By and large, educators are sensible people solving fairly complex but straightforward questions. Problems in school effectiveness can be solved if we have the tenacity and courage to tackle them. We've been hesitant, waiting for all the books to tell us how. In fact, we already know how to do it.

With the emergence of single-parent homes, and in some instances no-parent homes, what are we to do when this trend reaches epidemic proportions? Will the home continue to be such an important factor, as the research has shown up to now?

In the early 1950s and 1960s, parental involvement was an external factor over which educators had little or no control. For the most part, schools received cooperation and parents trusted educators' judgment. Research has shown that parental involvement and the home environment are extremely important. But just as we are learning the importance of the home, the trend in the 1980s and 1990s is toward single-parent and in some cases no-parent homes.

Research has provided a more realistic picture of how one has to operate in a practical setting if real improvement is to be made in schooling outcome. Schools that operate effectively have had to do so within a variety of contexts. Varying degrees of parental involvement, or any

other variable for that matter, when examined in a different school environment may produce different results.

The educational strategy should be to focus on the alterable variables. That is, if we're going to improve productivity, we can't wait for home environments to get better, we can't wait for family situations to improve, and we can't wait for everyone in the school system to reach a value consensus on key issues. Many factors could be better, but they have to be removed as excuses for not doing anything. This is the message that Edmonds, Brookover and other missionaries have tried to carry out.

The problem of single-parent or no-parent homes is not confined to certain parts of the country or social classes. For example, among some families living on the wealthy north shore of Chicago, both parents are working before the child is 6 years old. As far as learning is concerned, the child does not have the immediate attention of the parents in a way that only a parent can give. Getting parental substitutes is difficult although extremely radical alternatives do exist: the kibbutz in Israel and child centers such as those in Europe and the Soviet Union, for example. Parents are incredibly important in society. Educators who say they alone can solve the problems of children are exaggerating and making false promises. So the first thing educators can do is not make the promise.

The second thing educators can do is make research findings available to parents. Parents need to know that television is injurious, that homework is good, that parental involvement is critical, and that working directly with people in schools has produced beneficial effects. This information will not compel people to change, but at least making the information available is a step in the right direction.

On the other hand, it's not altogether clear whether or not change for the better will occur. It's perfectly possible for things to continue to deteriorate. Not only is the quality of learning going down but also the quantity of children. The decreasing number of school-age children is a frightening development for the country. We have fewer children and an increasing number of absent parents. For educational productivity, educators must acknowledge that they are a part of the solution but not all of it.

When an issue such as the effect of single-parent or no-parent homes is raised, it is important to know exactly what is going on in the school population. Researchers can do a systematic study to find out just how serious the problem is.

Research has shown that many kinds of intervention techniques for poor children turn out to work better for advantaged children. What is the hope for closing the gap between the privileged and the underprivileged?

One positive thing about the Brookover, Edmonds and other types of effectiveness research is they move away from radical solutions. For example, in the late 1960s not long after the Coleman Report was published, James Coleman proposed, in the light of the importance of family background, that perhaps children should be taken out of homes and brought to boarding schools. At the same time, we are moving away from radical expectations. In the case of future programs such as "Sesame Street," perhaps the creators will not promise anything so dramatic as raising the achievement of poor children to that of their middle class peers.

Certain programs or approaches may work well for some students but not

for other students. That suggests that educators avoid a specific prescriptive model of how to teach all children. Could you offer some guidance in looking at the research to draw options or alternatives that teachers could use with different students?

The research shows a move away from utopianism on recipes for school reform and from assuming there is one best method in teaching. The trend is also toward more efforts to synthesize those aspects of effective teaching into a package representing a mix. The adaptive learning model attempts to do that in offering a combination of group and individualized activities as well as prescribed and self-initiated activities.

One real illustration of the move away from a specific recipe is the Milwaukee elementary school system, which was ungraded for a long time. Today they are returning to grade-level expectations in elementary schools. They have whole-group instruction at grade-level expectation, and have small-group instruction at students' measured level-of-performance.

Some of the more promising work on teaching is moving altogether away from trying to find a recipe for teaching, and working directly with teachers in much the way one might work with administrators on management skills. For example, the work that Jane Stallings and others are doing represents an attempt to have teachers themselves work with their own management skills, improve their interpersonal skills and observe their own classroom activity in relation to important variables. What the research can do is confirm factors such as student involvement. If the instruction is so direct that students are not doing anything but sitting, it's probably not effective. The critical thing about programs such as that of Stallings is that they work. One can observe change in the behavior of the teacher, the climate of the classroom and the achievement of students.

One new way that teachers can have access to information about these programs and other research is through video-computer programs being made at Iowa State University. Research findings on various topics are going on video tape for teachers to use in self-initiated training. For example, a teacher wanting to learn about academic feedback punches a button and receives all the information about basic principles, interactions and other apsects of academic feedback. A teacher still has to figure out which topic to study and the right time for study, but the fact that one can get this information in this way is an exciting development.

In looking to the research for guidance on improving instruction, it's useful to think about biological analogies particularly as they relate to educational productivity. In 1973 nearly all the farmers in the United States planted the same kind of corn. The reason was that it had the highest yield, the highest productivity. What the farmers did not know was that particular variety of corn was susceptible to a certain kind of rust. So practically the whole national corn crop that year went down. The point is that in biology there is value in diversity.

The same kind of thing can apply to instruction. It would be terribly boring to have reinforcement all day. Any psychologist would say too much reinforcement leads to satiation. Mastery learning might result in the same kind of thing. Likewise, complete permissiveness might have negative effects. Since we are not altogether clear on what our values in education are -- we are, after all, a diverse country -- it's probably a good thing for children to be given a variety of educational treatments. We're not sure treatment A is good for this particular child, but exposing children to many different methods is probably a good idea.

Keeping in mind the recommendations about curriculum being made in national commission reports, it's also a good idea to keep history, art, music and the whole gamut of subjects in the schools. Because we're not clear on our consensus of values, the schools should have a variety of instruction and variety in curriculum goals.

CHARLOTTE-MECKLENBURG'S TEACHER CAREER DEVELOPMENT PLAN

Dr. Jay M. Robinson, Superintendent
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Governor Lamar Alexander of Tennessee recently gave me a book containing pictures of the people and places of his state. Mentioned in the foreword was a fellow from East Tennessee named Roy Blunt, Jr. Blunt said, "People need to sound like where they grew up. It's when you start trying to sound like something else that you get messed up."

When I spoke to the Tennessee General Assembly not long ago, I alluded to that book and said, "I grew up across the North Carolina line in the Appalachian Mountains at the foot of Roan Mountain. Believe it or not, people who grew up over there talk like I do. Although I've been gone from there for 35 years, I'm still following Roy's advice and I ain't about to get messed up."

I told the same story at a statewide meeting at Vanderbilt University and I repeat it today because I think it's important for me to remember who I am and what I'm trying to do. I recognize that some things we're trying to do in the Charlotte-Mecklenburg schools may be challenged but I feel it's important that we do something. After being a superintendent for 19 years, I don't mind the criticism.

More than three centuries ago John Locke said that hell is learning the truth too late. The public schools, even more than most governmental agencies, depend to a large degree on how people feel about them. We tend to become what others think we are, and at the present time the stock of the nation's schools is low. We must make some probably radical and

certainly dramatic changes and make them quickly or we will see the perceived erosion in quality education become a fact.

The problems of the nation's schools have been pointed out in about 30 national, 118 regional, and more than 200 state and local reports. Many of the reports do not represent the status of schools in this nation, certainly not in North Carolina. I guarantee that the Charlotte-Mecklenburg schools are good and getting better.

But if we spend a lot of time trying to discredit the reports and being defensive, rather than making some changes, we will assure the accuracy of the reports in the future. I was invited to the first planning meeting of the Carnegie Foundation to study the nation's high schools. I know first-hand the report is an in-depth, well-planned, high-quality study. It is not as critical as the report by the National Commission on Excellence. I hope it will calm some of our critics but it should not silence them.

At Charlotte-Mecklenburg, we began work on our teacher career development plan not because we were in trouble but because we were headed for trouble if something was not done. The overwhelming evidence was that we would not be able to replace the present teachers in our system with teachers of equal quality in the future. That was alarming because we always want to bring in new people of more talent and ability than those we lose. That is basic to improving any organization. We realized that of our 4,000 plus teachers in Charlotte-Mecklenburg, we would have a 75 percent turnover in 15 years. That's not typical, but we grew rapidly in the 1950s and 1960s. We also learned that in a time when we would need many teachers, there would be a teacher shortage both in quantity and quality. One indication of the shortage in quantity was the drop in the proportion of college freshmen saying they want to pursue a career in education -- from

21.7 percent in 1966 to 4.7 percent in 1982-83. Because an average of 10 percent is needed to staff the jobs in education, from kindergarten through college, a teacher shortage is inevitable. I see it in our personnel office already, especially in certain areas, except perhaps K-3. As for the shortage in teacher quality, in 1982-83 the education majors' SAT scores were about 80 points below the mean score of other college freshmen. For the first time, education majors ranked academically at the bottom of the scale.

Two incidents from my own experience are especially troubling. Last spring I spoke at a banquet given by the Charlotte News to honor the top 1 percent of our student body and their parents. I mentioned that in reading their resumes in the newspaper the night before, I had noticed that not one of those scholars was interested in a career in education. They laughed. Even though they were not being disrespectful, I was not prepared for the fact that our top scholars think a career in education is a joke.

Every year I speak to the practice teachers in our school system. We have always filled the 200 seats plus extra chairs around the wall of the auditorium in the staff development center. This fall the room was not half full. And the practice teachers who were there did not overly impress me. In the group were only two blacks and two males. As I learned from college and university advisers, this underrepresentation of minorities and men is typical of what is happening in our part of the country.

You're familiar with the large volume of statistics that predicts a teacher shortage. I believe the situation is critical. Research by Dr. Phillip Schelechty, former associate dean of the school of education at the University of North Carolina, and others have convinced me that without radical and dramatic change, the vast majority of teachers of tomorrow will

not be what we want. The projected profile is: white females from small towns and rural areas who were in the bottom half of their class academically and were poorly trained in small, weak colleges. That's absolutely unacceptable.

At Charlotte-Mecklenburg, we are having a difficult time recruiting minorities. Futhermore, a study we did recently shows that for the first time, our better black teachers are leaving the profession rapidly. That's frightening. This was one problem that prompted us to develop our plan.

Two years ago I appointed a committee to look at the merit pay plans of the nation's schools to determine if we could find a plan to attract excellent teachers. The committee was made up of teachers, administrators, school board members, lay community leaders, and elected representatives of teacher organizations. In December 1981, after several months of study, the committee reported that it couldn't find a plan to recommend. I asked the committee to continue its work to see whether some alternative to the merit pay concept could deal effectively with the problems merit pay is intended to address.

In spring 1982 the committee completed work on the basic concept from which we built our career development plan. We asked and received the Board of Education's approval to further develop the plan. It became obvious very early that if our plan was to have any real chance of success, we needed a change in the North Carolina tenure law. According to that law, a teacher in North Carolina receives tenure after three yers of teaching. In reality the law says if we don't document a disaster, that teacher is tenured for life. We asked the North Carolina General Assembly to change the tenure provision from three to six years. After a great struggle, the General Assembly voted to allow our school system to have up

to six years before granting tenure, starting next school year.

This change was important for two reasons: 1) We think more than three years is needed to develop excellent teachers and document sustained periods of excellence. 2) We felt we had to demonstrate up front that we were not talking about business as usual if we expected to obtain local money needed to fund the projected salary schedule.

We found some opposition but also substantial support. Currently we're completing and refining the plan with our new 21-member Advisory Steering Committee. The committee is made up of nine teachers, nine administrators, the director of the staff development center, the Dean of the School of Education at the University of North Carolina at Charlotte, and Dr. Schelechty, who has joined us full-time and serves as chairman.

As each part of the plan is developed, it is given to school-level liaison committees. Each of these committees is made up of the school principal and four to eight elected teachers, depending on the size of the school. They give input and reaction to every idea that is developed.

The Advisory Steering Committee is far enough along with its work that we feel we can safely implement the plan by 1984-85. We're going to the Board of Education November 15 and expect approval of the plan with the understanding that we will keep refining as we go along.

While the Committee has been working, we have been placing great emphasis on an effective teaching program. We decided to train every staff member who was involved in the instruction of children in the school system. The training concerns good teaching techniques and the recognition and understanding of the components of a good lesson. Dr. Madeline Hunter of the University of California at Los Angeles has been assisting us with the training. She and her staff have been in Charlotte for extended

periods and members of our staff have been at UCLA. Having begun more than a year ago, we have completed over 36 hours of training for all central office personnel, principals, coordinating teachers, curriculum specialists, and a key group of teachers in every school. The training should be completed for almost all of the teachers by the end of next summer. We think this is a significant accomplishment in itself -- that these people have been trained in a common view of good teaching and have taught demonstration lessons and been critiqued by their peers. As soon as the training is complete, we will be able to speak throughout our system for the first time with a common language about teaching. We believe this mutual understanding about good teaching is basic to effective evaluation. Teachers and administrators must know and understand what excellent teaching is before it can be demonstrated and documented.

Extensive training is an important part of our plan. The university system in North Carolina has been supportive. For example, in the past we have been isolated from doctoral programs at a state university, but the University of North Carolina at Chapel Hill has just established a field-based doctoral program in our community.

We are on schedule with our plan and confident it is going to work. We have strong, although certainly not unanimous, support throughout our system. Our plan has a great deal of support in our community, especially from business. Our community's strong support of education justifies our conviction that if we can document excellence in teaching, they will pay higher salaries. I am also convinced that's the only way they will pay higher salaries. If an across-the-board raise would attract the kind of teachers we want, I wouldn't be involved in this plan.

Based on this belief, we have developed a career structure for teachers. This career structure will attract talented young people into the teaching profession, fully develop this talent, and when excellent performance can be documented, offer financial rewards that will keep them in teaching. Present teachers with the ability to meet the same standards can also choose to move to the new career status. Indications are that the majority of them want to do that.

For beginning teachers, our plan would attempt to develop their talent through intensive staff development and inservice with strong support programs and extended probationary periods. Beginning next fall, if you come as a probationary teacher you stay a probationary teacher one or two years depending on how well you progress in your training and evaluations and in meeting the other criteria that have been established.

At the end of either one or two years, you move to a career nominee level. You stay in that status one or two years depending on your progress. At the end of that period (two or four years), you move to career candidate level and stay in that status for two years.

Until you reach career candidate status, your evaluation is conducted primarily by your committee in your school. That committee is made up of the principal, the assistant principal for instruction (this position may be unique to our system), and one additional teacher appointed by the principal. If you have career candidate status, your evaluation is conducted by three persons outside your school. Each evaluator is system approved and system trained. They visit your classroom and observe for a minimum of one class period at least three different times during the year. Their evaluations plus materials (your tests, teaching materials and other documents) are submitted by your school committee to a central

committee for recommendation for career status.

New teachers may be terminated at the end of any year. They must reach career status at the end of the sixth year or they will be terminated. That is significantly different from what I described earlier. We have to document excellence to grant tenure under this plan, whereas before we had to document disaster.

It is important to understand several things about the salary structure:

1. The salary structure rewards people for long-term performance of outstanding quality.

2. The salary structure always provides something to look forward to. For example, after winning tenure (career level 1), teachers will be eligible to receive a $2,000 increase every three years -- in addition to the normal cost-of-living increases -- assuming their performance over the previous three years has been judged outstanding.

3. The career structure provides career opportunities and recognizes the need for considerable individual choice. For example, new teachers have to reach career level 1, and present teachers have to move to this level to stay in the system. Teachers at career levels 2 and 3 will have to take on responsibilities in addition to their classroom teaching, such as developing curriculum materials, doing research, and other work. They have to agree to be mobile and go to various places in the system to deal with various problems. However, in all three levels, we insist that the vast majority of teachers' time must be spent in the classroom.

4. Staff development and development of outstanding teachers is a primary obligation of the school system. The major difference between our plan and the merit pay plan is that the latter only identifies and rewards

outstanding teachers. We want to produce and maintain outstanding teachers. Furthermore, we view evaluation as an integral part of the process. Evaluation not only tells the system how well a teacher is doing but also tells the teacher how well he or she is doing. Perhaps even more important, a good evaluation system tells the teacher what he or she is expected to do. Whether one is dealing with children or adults, clear communication of expectations is a primary ingredient for improving performance.

5. We are committed to providing job-imbedded, work-related educational programs for all professional employees. For beginning teachers, the training will be especially intensive and focus on the developmental skills needed to perform in outstanding ways. We will expect our beginning teachers in the probationary period of four to six years to have training equivalent to a master's degree provided by the system. In addition, we intend to provide special training to teachers to assure that they have the skills required to effectively implement new materials and procedures when they are needed to pursue system goals.

Every child deserves outstanding teachers. Our goal is to assure that all children get what they deserve. Outstanding teachers deserve to be treated in outstanding ways, and our goal is to assure that, too.

One thing we have emphasized from the beginning is teacher involvement at every step of the plan development. No matter how good the plan is, if the majority of the teachers are opposed to it, it will have little chance of succeeding. We believe we have the vast majority of our teachers committed to what we're trying to do. It has been a slow, tedious process. There are still a lot of questions, particularly about finding the resources for training. Our board members have said they are willing to devote those resources to training, and that's important.

We are trying to develop a parallel plan for principals and other administrators. It is essential because principals are tenured as principals in North Carolina. I'm trying to get that changed but I don't think I'll ever be successful. It will take us at least another year to develop that plan because we're going to need at least a year of staff development for principals.

One foreseeable problem is the large number of teachers we have in the system who want to move quickly into this plan. We believe we have reasonable acceptance of the idea that we cannot move them rapidly into this plan, especially at the beginning. We're going to try to work with 150-200 of our present teachers the first year as well as about 300 new teachers. How we move present teachers into this plan, especially initially, is critical. If we let one person move to this career ladder structure who not only is unqualified but also does not have a reputation for being good, we will jeopardize the credibility of the whole plan. As one teacher said the other day, "A teacher has to be like Caesar's wife to be in that first group." By and large teachers seem somewhat reluctant to be in the first group but they are eager to be in the plan. We have developed a formula for selecting that first group. Teachers with the most seniority will be in higher proportion to those with less seniority. We may have a morale problem with teachers having to stand in line too long. Our goal is to see that all present teachers who wish to try for this plan have an opportunity to do so before the first new people can be tenured, which will be within four years. We believe we can do that, but we're not certain.

Our governing officials who appropriate the money and our business leaders in the community have said if we have a plan that does represent excellence, they will see that we are provided the money to pay the

salaries. We are going to try to implement a plan that will determine if they mean it.

CHARLOTTE-MECKLENBURG'S TEACHER CAREER DEVELOPMENT PLAN
DISCUSSION OF IMPLICATIONS

This "Discussion of Implications" section summarizes the group discussion that occurred after this presentation. Since many of the participants' comments centered upon several key issues, the issues are presented in question form and underlined in the text. Although this record does not represent a verbatim account of the session, it does provide a summary of the issues that the participating educational leaders found most engaging and vital to educators in the six-state region.

What is the payoff in dollars for your teachers?

The Charlotte-Mecklenburg district has a state salary schedule with a local supplement. Salaries run from about $14,000 to $25,000 a year with a master's degree. The problem is that after 13 years, the salary scale flattens out and is not increased except for cost-of-living raises. After 6 to 10 years, teachers are not satisfied with that plateau.

New teachers will come in on the present salary schedule. As probationary teachers, they will receive the same state salary plus local supplement and cost-of-living raises, unless salaries are frozen by the General Assembly. If new teachers are tenured after four, five or six years, in addition to the present salary, they will get a $2,000 raise.

Every three years after that, they are eligible for another $2,000 raise. They have another summative evaluation and have to be judged to have excellent performance over the prior period. They receive those raises as long as they stay in the system and in the classroom. So the

salary can reach the middle to high $30,000 range, based on today's market.

Teachers at career levels 2 and 3 (career nominee and career candidate) will have only a summative evaluation every five years. They will get $5,000 increments and stay about $2,000 above the career level 1 teachers. They will have extra duties and must be willing to transfer from school to school as the need for their special skills arises.

Career level 2 and 3 teachers will be few in number. But we felt that it was important to have teachers with some status beyond career level 1.

Do you offer career level 2 and 3 teachers a longer contract so their salaries would be more comparable to private sector salaries for equivalent kinds of duties?

Career level 2 and 3 teachers have first option at summer jobs, both teaching in summer school and developing staff training materials and curriculum. We have a great many children attending summer school because it has been demonstrated that some children take longer than others to master certain things. When they're behind, we give them free summer school. If we're convinced they're loafing, we require summer school. If their attendance is too low, we require summer school. We have a great deal of summer activity, remediation and enrichment.

Career level teachers will not be required to take summer jobs, however. We felt that would be a negative incentive for some teachers.

How much will the plan cost?

We don't know how much the plan will cost. We anticipate it will be 10 percent or more of our local budget ($60 million), or $6 million in 15 years. We will have to come up with that amount locally. We have

community support and we are operating on faith that they will provide the funds we need.

You stated that initially you will allow 150 of your present tenured teachers to move into the career development plan. If one of those 150 tenured teachers should not make it, what would be the alternative?

If this plan applied only to new teachers, we feel confident that the plan would be a success. But this plan deals with present teachers, and that is going to be the toughest part.

We've been very careful to see that no present teacher loses anything under the new plan. If teachers opt to try for this new career level 1, whether they make it or not, they still have all the tenure rights they had in their previous position. However, teachers could still be dismissed if a case could be documented against them.

It sounds simple to document a case. We won our last two cases in superior court. One cost $33,000 in legal fees and the other $27,000. But we can't put our Board through that too many times. And as soon as teachers realize that, we don't know what we're going to do. If they use all the due process that is in place, if they use all the rights they have under tenure, if they use the grievance procedure to the limit, we will spend all our time in court and won't do anything about the new plan.

Does the new tenure law apply only to your district or to the entire state of North Carolina?

When the General Assembly changed the tenure law, it specified that the change would apply to systems in North Carolina with more than 70,000 students. Charlotte-Mecklenburg is the only district that fits that

criterion. In effect, the law applies only to our district.

Do you expect to have more tenure under this plan than without it?

We will probably have a high rate of tenure under the new plan. We will recruit more carefully and train better. The rigorous standards may drive away some teachers, but we believe they will attract others.

We don't want to abolish teacher tenure. We want good teachers to have it. But we want to be able to document excellent performance before we grant it. Additionally, we would like to see that no administrators in North Carolina have tenure as administrators. That's a ridiculous situation.

Does Charlotte have a teachers' union?

We have three different teachers' unions in Charlotte: AFT, NCAE, which is a local branch of the NEA, and a local organization that splintered off some years ago. We do not have collective bargaining or negotiation. Before that comes, we want to get this new plan in place.

What criteria, in addition to observation and evaluation by teams, will you use to determine excellent performance?

No matter what other documentation is on hand, the evaluation -- that is, observation of teaching -- has to be high. A teacher cannot be promoted on the basis of the other criteria.

At the same time, observation and evaluation alone is not adequate. The planning committee has developed 24 competencies that an excellent teacher must demonstrate. A teacher and the school evaluation committee will be expected to supply documentation that a teacher meets most of those

competencies reasonably well. Some evidence will be a teacher's tests, the teaching materials, and plans. Other evidence may be harder to collect. But a deficiency in a competency will require additional training, worked out by the teacher and the committee.

Do you foresee the implementation of a standardized testing program to measure student achievement as a criterion for moving teachers from one level to another?

We have no plans to make student test results a part of the criteria for moving teachers from one level to another. In the first place, we question whether it's possible to get accurate test results. But that is not really the issue. More important, we don't think having student test results as part of a teacher career development plan will stand the legal test. And teachers are going to be suspicious of any evaluation plan that includes student achievement as a criteria.

We have a competency test in North Carolina. I'm on the commission, but I don't believe in it. We had a statewide testing program implemented there in 1978, after I had been superintendent for a year. Those test results showed that we were a year below national norms. School board members became upset and the newspaper treated the situation as big news. I promised that we would raise test scores.

We developed a promotion policy in which students at the third, sixth and ninth grades who didn't make above the 25th percentile would be retested if they wanted to be. We offered them a free summer school with small classes and another retesting at the end of that. If they didn't make above the 25th percentile, they wouldn't get promoted at the third, sixth, and ninth grade, unless they were handicapped or had already been retained in that block of grades.

That's a simplistic approach, but the next year we had only half as many children making below the 25th percentile as the year before. Today those test results are way above national norms. The test hasn't been re-normed in several years, but we're doing better than the rest of the state.

Another big issue at one time was the gap between our white and minority students. We have made substantial progress in closing that gap. We have also established a set of discipline guidelines, with remarkable results, and improved attendance to the point that attendance last year was the highest it has ever been in the history of the school system.

If you ask people on the street how to judge teachers, they will say, "Test the children when the year starts and again when it ends, and pay teachers accordingly." We can't do that. We have assured our teachers that we will not be a party to that. Someday someone may come up with test results that are accurate enough and teachers may say that's what they want, but we don't see it ever being a part of our plan.

Would you elaborate on the trained observers who will evaluate fifth and sixth year teachers?

They have not been selected, but the criteria have been established. Some evaluators will be some of our best, proven teachers with the strongest reputations and others will be curriculum specialists. They will be in training next summer. We will probably not keep an evaluator in that position more than a year. We don't want that person to become known as a professional evaluator for life.

Will the evaluation team also write a prescription to meet the need of individual teachers?

One weakness in the plan is that we won't have enough people doing the evaluations for all six years. We have to train teachers within the schools and the principals to do that. I'm not satisfied that every school committee will do as much for some teachers as some school committees will do. But we don't know how to get around that. Part of the committee's responsibility will be to prescribe a program of improvement for the teacher.

How will you train teachers? Who will provide the training?

Training will come from a combination of sources. Some will come from the state department of education, because it has done a good job in developing a quality assurance program. The University of North Carolina at Chapel Hill, which is doing a good job in evaluation training, will help us. We also have a couple of staff within our school system who will be involved.

In selecting a teaching model, we looked for one that was reasonable and left enough latitude for teachers to use their own ideas in conducting a class. We settled on Madeline Hunter's teaching model. It identified the important components of a lesson, it provided for the involvement of children in the way a lesson was open and closed, and most teachers were comfortable with it. We have had great success with everyone from beginning teachers to long-time administrators, including those who have been out of the classroom for 20 years. Our people are enthusiastic about it. The same is true of the different reading methods we have in our system. If the principal and faculty are sold on a particular method, the children learn to read.

Arkansas has used Madeline Hunter's model in its program for effective teaching and has been quite pleased with it. One reason is that when an observer goes into a teacher's classroom, that teacher knows what to expect and feels comfortable. It is obvious if that teacher is conducting a reasonable lesson. Furthermore, the model allows teachers and principals to use a common terminology. And principals say it has lessened their discipline problems because children see that everyone is working together in the same program.

Will you require probationary teachers to have a master's degree before being promoted?

We haven't made the final decision, but we have decided that we don't want any more canned degrees. Our state board of education has provided for an educational consortium that allows us to contract with several universities to supply components of the degree if one university will agree to grant the degree. We want probationary teachers to earn a master's degree. But if a master's degree does not produce the kind of training we want, we're going to drop that.

The Tennessee legislators asked me about teachers in Charlotte completing training requirements equivalent to a master's degree. If they move to Tennessee, they would not get paid for it. I explained that if we could get them a master's, we would, and that was our goal. But we weren't going to sacrifice what we believed just to have a canned program. In my community when IBM trains someone and that person goes to Westinghouse, Westinghouse doesn't mind paying for the training the person got at IBM.

What are your schools of education saying about the plan?

All kinds of things. They are trying to be helpful and supportive, but by and large we have not been satisfied with all of them. We have 44 institutions of higher learning to train teachers, but only about a dozen of them should be left open tomorrow morning. When this plan is in place, they can close the schools of education and give us a person with a good solid academic education and a couple of courses in child behavior and we will do the rest of the training at home.

Another way the schools of education have failed is with administrators. Our principals and superintendents are not trained to do their job.

Are your principals presently in a position to be evaluating teachers and recommending staff development? What kind of training are you providing for them?

We have a long way to go before we can have a parallel plan for principals. But under the proposed plan for teachers, the principal, assistant principal and another teacher (master teacher) would be the committee to evaluate the new teacher. One concern of our principals is that the final evaluation of teachers would not rest with the principal.

By contrast, under the Florida master teacher plan, the principal has veto power. In other words, you cannot be a master teacher in Florida unless the principal recommends you. That plan is flawed because some of the principals in our part of the country have demonstrated that they would not be fair and reasonable in evaluations. So they don't have that kind of control in our plan.

But principals have a great deal to do with developing the training of the teachers. Curriculum training specialists in our system work with principals and teachers to assure that we fill in the gaps. We also do

regular needs assessment at our staff development center. So we do a reasonably good job of making the training available and identifying the people who need it. But we have a long way to go. We've done at least enough staff development and inservice that we can see the great benefits. We probably will put more resources into training. There is just no substitute for a good principal.

What will you do to convince the community that Charlotte schools are producing a quality product -- youngsters who will be able to contribue to the community in a meaningful way?

In the first place, the schools cannot let test scores get so low that they become an issue again. We can do a great deal to improve schools, more than we've been doing. One problem, for example, is the time we are wasting on Mickey Mouse vocational education courses in North Carolina. It's a crime to put a child who is capable of mastering basic skills in a vocational education course. We are going to try to do something about that in our system.

The best way we can convince the community is to have a good atmosphere for learning. That is, we can have well-disciplined children with high attendance and teachers who have been observed enough so that we know they are performing in a competent way.

How basically will the plan make your district better?

The advantage the Charlotte-Mecklenburg plan has over other kinds of merit plans is that it seeks to document excellence. I argued with Houston Superintendent Billy Reagan recently about the futility of proving that teachers aren't competent. What do you do when you prove that? You still

have them. We are not going to get in the business of demonstrating how bad the teachers in Charlotte-Mecklenburg are. We have more than our share of the great ones. But we also have many who should never have been tenured and some whom we will never get rid of.

What really concerns us is that without a plan like this, we absolutely are not going to be able to get the quality we now have, let alone improve it. That's where the nation is at risk -- not the quality of education today, but rather the caliber of teachers in the future. That's why it's important that we do something immediately to attract brighter students. There are many things we have to do. We can tighten standards, for example. But if we just tighten standards and don't put the carrot on the other end, we will simply ensure a teacher shortage.

As I recently told Education Secretary Terrel Bell, I doubt if we ever again see a time when there is this much interest in public schools. If we don't seize this opportunity and do something different to guarantee quality teachers and upgrade standards, the public will give up on us. When they do, this administration or one soon afterward will be successful in establishing tuition tax credits and voucher systems. We're going to fight that. The only way to do that is to prove to people we can do a good job in the public schools.

NOTE: A good summary of the Charlotte-Mecklenburg Teacher Career Development Plan appears in the June 15, 1983, issue of Education Week. In addition, Dr. Robinson has a more current article and will send it upon request.

AREAS FOR ACTION
AREAS FOR FURTHER RESEARCH

The participants' packets included color coded response sheets to be filled out at the conclusion of each presentation and discussion session. Each participant was asked to write what he or she believed to be some appropriate areas for action and further research in relation to the topic presented. In addition, the institution or institutions that should be responsible for the action or research were to be noted on the sheet. These suggestions were compiled after each session and provided the basis for the small-group discussions during the final session. The participants were randomly divided into four groups; each of three groups discussed the suggestions for areas of action compiled from a specific presentation and discussion session and the fourth group focused on areas for further research. As a result of the discussions, each group synthesized three significant areas for action and research, indicating the institution or institutions that should be responsible.

This section includes those significant areas for action and research and the discussion that followed their presentation to the assembled whole group.

SIGNIFICANT AREAS FOR ACTION AND RESEARCH
from the
Small Group Discussion
of Participants' Comments
on the
Variables in Educational Productivity Session

Three significant areas of need were identified:

I. for the investigation and implementation of appropriate instructional strategies.

Responsibility for the above should lie with researchers and Local Education Agencies (LEAs).

II. for the effective utilization of the home environment for learning.

Responsibility for the above should lie with researchers, and LEAs.

III. to involve all segments of the community in the educational process.

Responsibility for the above should lie with business, industry, schools, taxpayers, parents, and legislators.

SIGNIFICANT AREAS FOR ACTION AND RESEARCH
from the
Small Group Discussion
of Participants' Comments
on the
Human Resources Management Session

Three significant areas of need were identified:

I. to assess characteristics of effective principals based on current research.

Responsibility for the above should lie with State Departments of Education (SDEs), universities, research and development centers, and LEAs.

II. to provide not only strong pre-service and in-service training opportunities for principals but to also strengthen certification requirements for principals.

Responsibility for the above should lie with SEAs, universities, professional development centers and LEAs.

III. to provide adequate funding and a strong delivery system for effective pre-and in-service educational programs for principals.

Responsibility for the above should lie with the state legislatures, SDEs and LEAs.

SIGNIFICANT AREAS FOR ACTION AND RESEARCH
from the
Small Group Discussion
of Participants' Comments
on the
Teacher Career Development Session

Three significant areas of need were identified:

I. to identify, synthesize, and disseminate career development plans to SEAs, LEAs and Institutions of Higher Education (IHE).

Responsibility for the above should lie with organizations such as SEDL.

II. to study and prepare career development plans to include evaluation, professional growth and incentive pay.

Responsibility for the above should lie with SEAs and LEAs.

III. to sell the concept of teacher career plans and train participants for implementation.

Responsibility for the above should lie with LEAs, SEAs, IHEs, and SEDL.

SIGNIFICANT AREAS FOR ACTION AND RESEARCH
from the
Small Group Discussion
of Participants' Comments
on the
Areas for Further Research

I. Technological Developments

a. What are the higher order thinking skills that can be taught through Computer Assisted Instruction (CAI)?

b. What kinds of resources can be made available to LEAs to facilitate evaluations of CAI?

II. Human Resources Management

a. What incentives would attract and retain teachers?

b. What happens to the culture of the school and the performance of the students when human resources management techniques are implemented?

III. Home/Family Relationships

What intervention strategies are most effective in the development of home/family relationships which will enhance student achievement?

GENERAL DISCUSSION

The discussion period focused on the feasibility of the identified areas for action and research.

Society in general is demanding more release time and recreation. At the same time, we are saying that students should spend more time on homework, more time-on-task at home, and more involvement of parents in education. These two are incompatible.

Perhaps we need to look at strategies as they apply to the real world. Baton Rouge, for example, has after-school programs. New Orleans has a before-school and after-school program for youngsters of working parents. Parents pay a fee, which goes to pay teachers who volunteer to work in the program. One aspect of the program is working with children on homework.

Tulsa and other cities have a homework hotline, in which certain teachers are paid to come into the school after hours. Youngsters call in and get assistance in math, science and other subjects. The program has proved to be very beneficial.

One district in Arkansas has school libraries open in the evenings that serve as homework centers and give students a quiet place to study.

Another problem is the heavy involvement of some students in extra-curricular activities. In Mississippi, the medium and small school districts usually have a corps of students who are involved in everything -- sports, band, clubs. How is the school going to justify giving more homework when they keep the students tied up in other activities three and four nights a week?

One theory some parents use is that athletic involvement guarantees a head start on a good career. Youngsters may make B grades, but they will get athletic scholarships for college and in the process stay off drugs and cigarettes. After college, they are hired by local banks and other businesses and start on a path of making money. The reality, however, is that only a small percentage of students can actually do that.

A small (500 students) school in Western Oklahoma has faced the dual problem of: 1) giving students all the courses they need in the fairly short school day, in addition to band, FFA, and other activities they take part in, and 2) preparing students for tougher entrance requirements of universities. One proposed solution was four early-bird classes, starting an hour before school, and three after-school classes. The result? A total of six students enrolled. The point is that what sounds like a great idea may not materialize. But the school is going to try it again next year because parents have said, "I can't believe that didn't work."

The same kind of program has worked well in several high schools in Texas. However, the real solution to Oklahoma's problem may be: get the governor to appoint a multimillionaire to head up a committee on education and let him attack extracurricular activities.

Homework, as Dr. Walberg mentioned, does not displace extracurricular activities and athletics so much as it displaces television. Perhaps research could be done on how much athletes watch television. How do students really allocate their time when faced with homework and other activities?

Apart from students' involvement in extracurricular activities, another issue is how many parents -- after a hard day's work -- have the energy to supervise and direct homework?

A similar issue applies to students. Some schools with extended day programs have found that students are too tired to deal with homework late in the day. One school district has solved this problem with minicourses. Some minicourses are academic and some are cultural -- ballet, art, piano. They provide a break for both teachers and students. In the beginning the minicourses were financed with extraneous school funds. When those ran out, parents picked up the tab. Today the school provides seed money for start-up and the community pays the fees. Another phase of the minicourses idea is multi-age grouping, of cross-age tutoring with homework.

The dilemma for parents is that time at home in the evening is "the time I have for fun with my children." The minicourse approach frees them from having to supervise homework as well as engages their children in interesting and educational activities after school. In areas where families are not so affluent, parents are particularly grateful for the opportunities that these minicourses give their children.

One way to approach the issue of how to best use available time is to move athletics outside the school day. In one district in Arkansas, students take a full day of academic courses (including required physical education courses). Students who want to participate in athletics or extracurricular activities not tied to a grade take part in those after school. However, this solution may not be feasible for schools that have only one gymnasium.

Many other strategies are possible, depending on the resourcefulness and creativity of all involved. One strategy, for example, might be to experiment with a home tutoring program.

APPENDIX:

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